

## FIELD ENGINEERING BULLETIN

AMPEX CORPORATION  
AUDIO-VIDEO SYSTEMS DIVISION

MODEL VPR-3  
BULLETIN NO. 60961 SHEET 1 OF 2  
DATE 6/84 BP-8406-19

"AST PROM CHANGE"

DONE  
11-12-84  
BY ROY

### I. APPLICABILITY

VPR-3's with AST Servo PWA, Part Number 1467070-01 through -03.

### II. PURPOSE

To allow centering of AST during Record Mode.

### III. DISCUSSION

This change allows the AST head to be Servo Controlled, while the VPR-3 is in record. This prevents the possibility of an occasional off-track condition which could appear as a loss of R.F.

### IV. PARTS REQUIRED

Description	Ampex Part Number	Quantity
Prom (U18)	1467412-02	1
Prom (U27)	1467413-02	1
Prom (U86)	1467416-02	1

Parts required for this update may be purchased through Ampex. Installation assistance can be obtained through your local Ampex regional office at current Ampex Field Engineering rates.

MODEL	VPR-3	
BULLETIN NO.	60961	SHEET 2 OF 2
DATE 6/84	BP-8406-19	

"AST PROM CHANGE"

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V. PROCEDURE

1. Replace Prom U18 on the AST Servo PWA with Part Number 1467412-02.
2. Replace Prom U27 on the AST Servo PWA with Part Number 1467413-02.
3. Replace Prom U86 on the AST Servo PWA with Part Number 1467416-02.
4. Update schematic to reflect changes made and remark PWA -04.



## FIELD ENGINEERING BULLETIN

MODEL VPR-3  
BULLETIN NO. 60962  
DATE 7/84 BP-8407-02

SHEET 1 OF 2

NOT NEEDED

### TIME/CODE READER/GENERATOR MODIFICATION -05

#### I. APPLICABILITY

Time Code Reader/Generator PWA, Part Number 1467180-01 through -04.

#### II. PURPOSE

To ensure correct Time Code Waveform and to minimize high frequency oscillation in character generator video.

#### III. DISCUSSION

The following circuit changes improves the recorded Time Code Waveform and prevents high frequency oscillation in character generator video.

#### IV. PARTS REQUIRED

Ampex P/N	Description	Quantity
064-780	Capacitor, cer. mono 43PF, 50V	4
066-855	Resistor, C.F. 39 ohm	3
076-004	Resistor, C.F. 180 ohm, 1/4W	1

Parts required for this update may be purchased through Ampex. Installation assistance can be obtained through your local Ampex regional office at current Ampex Field Engineering rates.



MODEL	VPR-3	SHEET 2 OF 2
BULLETIN NO.	60962	
DATE	7/84 BP-8407-02	

**V. PROCEDURE**  

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1. Replace C22, 31, 33 and 34 (22PF) with 43 PF, 50V cer. capacitors, Part Number 064-780.
2. Replace R31 (130 ohm) with a 180 ohm, 1/4W, 5% CF resistor, Part Number 076-004.
3. Replace R45, 59 and R70 (4.3 ohm) with 39 ohm, 1/4W, 5% resistor, Part Number 066-855.
4. Cut the trace connecting U51 pin 13 to the junction of U69 pin 1 and U73 pin 10, at U51 pin 13, leaving U64 pin 1 and U73 pin 10 connected.
5. Add a wire and connect U51 pin 13 to the junction of U61 pins 11 and 13.
6. Update schematic to reflect changes made.
7. Change PWA dash number to -05.

## FIELD ENGINEERING BULLETIN

AMPEX CORPORATION  
AUDIO-VIDEO SYSTEMS DIVISION

MODEL VPR-3  
BULLETIN NO. 60963  
DATE 7/84 BP-8407-20

SHEET 1 OF 2

NOT NEEDED

### TIME CODE READER/GENERATOR MODIFICATION -06

#### I. APPLICABILITY

Time Code Reader/Generator PWA, Part Number 1467180-01 through -05.

#### II. PURPOSE

To improve drop frame inconsistency perform the following modification.

#### III. DISCUSSION

Installation of modified program firmware improves Drop Frame/Full Frame operation.

#### IV. PARTS REQUIRED

Ampex P/N	Description	Quantity
1467457-02	PROM, TC Reader, Program	1

Parts required for this update may be purchased through Ampex. Installation assistance can be obtained through your local Ampex regional office at current Ampex Field Engineering rates.

# AMPEX

**FIELD  
ENGINEERING  
BULLETIN**

AMPEX CORPORATION  
AUDIO-VIDEO SYSTEMS DIVISION

MODEL	VPR-3	
BULLETIN NO.	60963	SHEET 2 OF 2
DATE	7/84	BP-8407-20

## V. PROCEDURE

1. Replace U47 (1467457-01) with a 1467457-02 PROM.
2. Update schematic to reflect changes made.
3. Remark PWA-06.

## FIELD ENGINEERING BULLETIN

AMPEX CORPORATION  
AUDIO-VIDEO SYSTEMS DIVISION

MODEL VPR-3  
BULLETIN NO. 60964  
DATE 7/84 BP-8407-21

SHEET 1 OF 2

TIME CODE READER/GENERATOR MODIFICATION -07

NOT NEEDED

### I. APPLICABILITY

Time Code Reader/Generator PWA, Part Number 1467180-01 through -06

### II. PURPOSE

To correct character irregularities and to compensate for noise on reset line, perform the following modification.

### III. DISCUSSION

Installation of modified Font and program firmware improve character presentation. Adding a .1 UF capacitor prevents noise on the reset line randomly resetting the microprocessor.

### IV. PARTS REQUIRED

Ampex P/N	Description	Quantity
064-653	.1 UF, 50V, 20% mono capacitor	1
1467455-02	Prom TC Reader, Font	1
1467457-03	Prom TC Reader, Program	1

Parts required for this update may be purchased through Ampex. Installation assistance can be obtained through your local Ampex regional office at current Ampex Field Engineering rates.



MODEL	VPR-3	SHEET 2 OF 2
BULLETIN NO.	60964	
DATE	7/84 BP-8407-21	

**V. PROCEDURE**  

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1. Add a .1UF, 50V mono capacitor, part number 064-653 as follows:
  - a. Connect one end to ground.
  - b. Connect free end to the junction of U74 pin 8 and R103.
  - c. Designate added capacitor C88.
2. Replace U24 (1467455-01) with a 1467455-02 PROM.
3. Replace U47 (1467457-02) with a 1467457-03 PROM.
4. Update schematic to reflect changes made.
5. Remark PWA -07.

## RECOMMENDED AIR SYSTEM MAINTENANCE - VPR-3

### I. APPLICABILITY

All VPR-3.

### II. PURPOSE

To ensure trouble free operation of the air system; the following air system maintenance is recommended.

### III. DISCUSSION

The VPR-3's air systems is equipped with two (5 micron) air filters: one at the inlet to the pump and the other at the output of the pump. The filter element is housed inside a transparent polycarbonate jar which is housed inside the air system box on early version production of the VPR-3's. Later version production, has the filter outside of the air box, to facilitate ease of filter element replacement. The filter elements should be checked periodically for excessive accumulation of dust, dirt and carbon deposits. Ampex recommends that these filters be replaced at least every 500 hours of VPR-3 use. However, filter replacement frequency is ultimately a function of the cleanliness of the environmental air and may need to be changed often in a dirty environment. The above recommendation assumes a normally air condition room with normal dust particles.

### IV. PARTS REQUIRED

Parts required for this update may be purchased through Ampex. Installation assistance can be obtained through your local Ampex regional office at current Ampex Field Engineering rates.

<u>Ampex Part Number</u>	<u>Description</u>	<u>Quantity</u>
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#### NOTE

Choose the filter that pertains to your system.

052-275	Filter element (early version machine)	2
052-034	Filter element (later version machine)	2

MODEL	VPR-3	
BULLETIN NO.	60975	SHEET 2 OF 3
DATE 9/84	BP-8409-23	

**RECOMMENDED AIR SYSTEM MAINTENANCE - VPR-3****V. PROCEDURE**

A. Filter replacement procedure on early version of VPR-3 air system: (Inside air system box).

- 1) Unfasten power supply and pull it down on its hinges.
- 2) Remove the air system back panel by unfastening four captive screws to expose the air filter and compressor.
- 3) Unfasten both polycarbonate jars and remove filter elements.
- 4) Replace filter element, Part Number 052-275. Install filter and jar finger tight but be careful not to cross thread the polycarbonate jar.

**CAUTION**

When installing the jar, ensure the o-ring is not damaged. Always change both filters as a set.

- 5) Re-assemble in the reverse order of removal and check for air leaks with the system running. Verify that the system is adjusted for the proper operating pressure and vacuum. Adjust if necessary.

**NOTE**

It is highly recommended that the inlet valve is checked everytime the filters are changed. Ensure that it is clean and free from dust. This valve is exposed to free air and will get dirty, especially in a dusty environment. When the valve is disassembled, ensure that the ball bearing is not lost.

MODEL	VPR-3	
BULLETIN NO.	60975	SHEET 3 OF 3
DATE 9/84	BP-8409-23	

**RECOMMENDED AIR SYSTEM MAINTENANCE - VPR-3**V. PROCEDURE - continued

B. Filter replacement procedure or later version air system: (Outside air system box).

- 1) Unfasten Power Supply and pull it down on its hinges.
- 2) Remove the polycarbonate jars and filter elements.
- 3) Replace filter, Part Number 052-034 and finger tighten both the jar and the filter.

**CAUTION**

Be very careful not to cross thread the jar and/or damage the o-ring.

- 4) Re-assemble in the reverse order of removal and check for air leaks. Check pressure and vacuum for proper operating levels. Adjust if necessary.



## FIELD ENGINEERING BULLETIN

MODEL VPR-3

BULLETIN NO. 60977

SHEET 1 OF 3

DATE 10/84 BP-8410-26

ROY 11-21-84

### AUDIO PWA CHANGE TO AUDIO 3 PWA

OUR P/N IS 1467082

#### I. APPLICABILITY

NOT NEEDED ?

Audio 3 PWA, P/N 1467080-01 (slot 10) which upon completion of modification is re-marked PWA, P/N 1467106-06.

#### II. PURPOSE

ALSO 1467106-05

The purpose of the following modification is to create an Audio 3 PWA for primary use with Time Code Generator Readers to provide reliable reading of Time Code at shuttle speeds, to resonate and widen range of transformer and to improve high frequency equalization.

#### III. DISCUSSION

Steps 1 through 13 are already performed on the majority of VPR-3 machines and are only provided here for information. The modifications as a whole are to improve VPR-3 audio performance.

#### IV. PARTS REQUIRED

AMPEX P/N	DESCRIPTION	QTY
1467008-BM	LABEL	1
034-677	680 PF, 300V, 1%, MICA CAPACITOR	2
056-291	470 PF, 50V, 1%, MICA CAPACITOR	1
062-961	3.92K, 1/8W, 1% MF RESISTOR	2
062-983	10K, 1/8W, 1%, RESISTOR	5
064-685	-200 PF, 50V, 1% CER. CAPACITOR	1
064-731	680 PF, 50V, 1%, CER. CAPACITOR	1
064-828	4700 PF, 50V, 1%, CER. CAPACITOR	1
066-004	24.3K, 1/8W, 1%, RESISTOR	2
066-689	2.2K, 1/4W, 5%, RESISTOR	1
066-830	10K, 1/4W, 5% CF RESISTOR	1

## V. PROCEDURE

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1. Verify that the junction of R275 and the base of Q67 is connected to +24V, if not, correct it.
2. Verify that IC U61 Pin 6 is connected to ground, if not, correct it.
3. Verify that R293 is a 100K, 1/4W, 5% resistor, P/N 066-849, if not, correct it.
4. Replace R206, R252, R254 and R295 (20.5) with 10K, 1/8W, 1% resistor, P/N 062-983.
5. Replace R104 and R149 (39.2K) with 24.3K, 1/8W, 1% resistor, P/N 066-004.
6. Replace C135 and R301 as follows:
  - A. Remove C135 (510 PF) and R301 (560 ohm).
  - B. In C135 space, install a 2.2K, 1/4W, resistor, P/N 066-689. Re-mark R301.
  - C. In R301 space, install a 200 PF, 50V capacitor P/N 064-685. Re-mark C135.
7. Add a 4700 PF, 50V, 1% cer. capacitor as follows:
  - A. Connect one end to the junction of U52 Pin 2 and R343.
  - B. Connect free end of capacitor to ground.
  - C. Designate added capacitor C167.
8. Verify that PWA E1 is connected to PWA E7, and that PWA E2 is connected to PWA E8. These may be reversed, if they are, please correct.
9. Verify that U23 pin 6 is connected to ground.
10. Verify that R294 is 100 ohms (P/N 066-812). Replace if required.
11. Verify that R386 is installed and is a 10K, 1/4W, resistor, P/N 066-830.

12. Verify that C166 is installed and is a 680 PF, 50V capacitor, P/N 064-731.
13. Verify that C168 (560 PF) is removed.
14. Remove and discard C69 (51 PF).
15. Replace R104 (24.3K) with a 10K, 1/8W resistor, P/N 062-983.
16. Place the label on the handle of PWA.
17. Replace C72 (510 PF) with a 470 PF, 500V, 1% mica capacitor P/N 056-291.
18. Replace C112 and C128 (470 PF) with 680 PF, 300V capacitors, P/N 034-677.
19. Replace R259 and 328 (6.49K) with 3.92K, 1/8W, 1% resistors, P/N 062-961.
20. Add a 10K, 1/4W, resistor, P/N 066-830 in the space marked R387. See note.
21. Add a 680 FF capacitor, P/N 064-731 in the space marked C166. See note.
22. Update schematic to reflect changes made.

NOTE:

Some versions of the PWA do not have spaces marked for R387 and C166. On these PWA's add the component as shown.

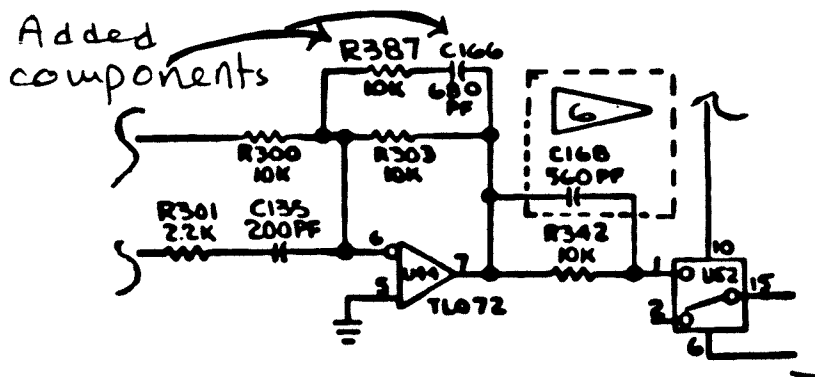


FIGURE 1

MODEL VPR-3  
BULLETIN NO. 60981 SHEET 1 OF 2  
DATE 9/84 BP-8410-25

DONE 11-13-84  
BY ROY

## COLOR FRAMING AND SERVO IMPROVEMENT

### I. APPLICABILITY

VPR-3 with C.T. & Capstan Servo PWA 1467150-01 thru -08.  
(NTSC)

### II. PURPOSE

To insure proper color frame start, and improve capstan servo response.

### III. DISCUSSION

A small change is made to insure proper color frame start (AST normal) and improve capstan servo response in slow capstan acceleration.

### IV. PARTS REQUIRED

AMPEX P/N	DESCRIPTION	QTY
066-913	RESISTOR, 220K, 5%, 1/4W	1

Parts required for this update may be purchased through Ampex. Installation assistance can be obtained through your local Ampex regional office at current Ampex Field Engineering rates.

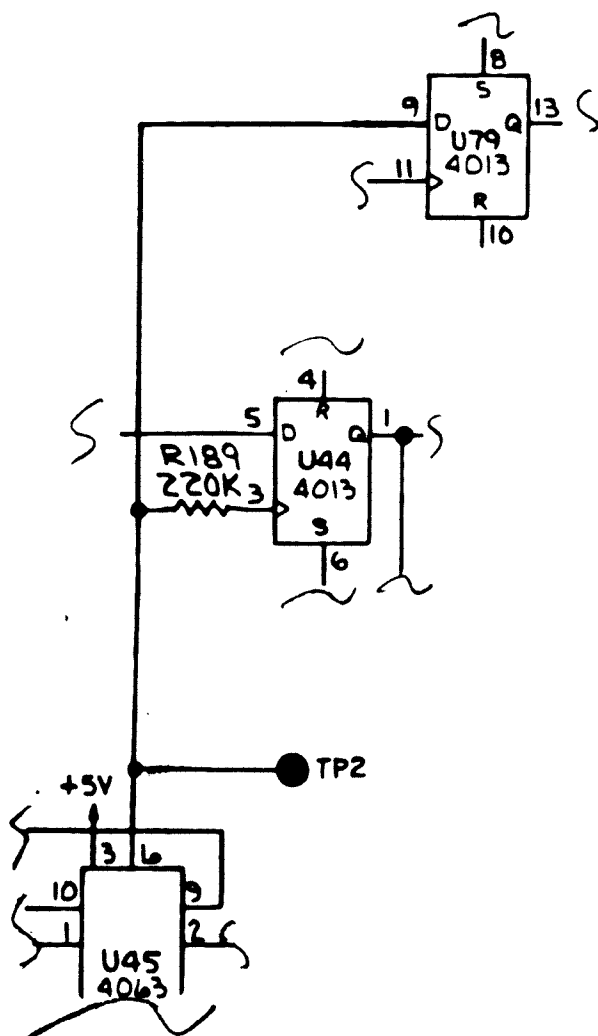
### V. PROCEDURE (See Figure 1)

1. Remove capacitor C118 (2200 PF).
2. Cut the trace at U44-3 (be sure Pin 3 is isolated).
3. Add a 220K resistor from U44-3 to the trace which was cut (the trace goes to U79-9 & U45-6).



MODEL	VPR-3		
BULLETIN NO.	60981	SHEET	2 OF 2
DATE	9/84	BP-8410-25	

IS



WAS

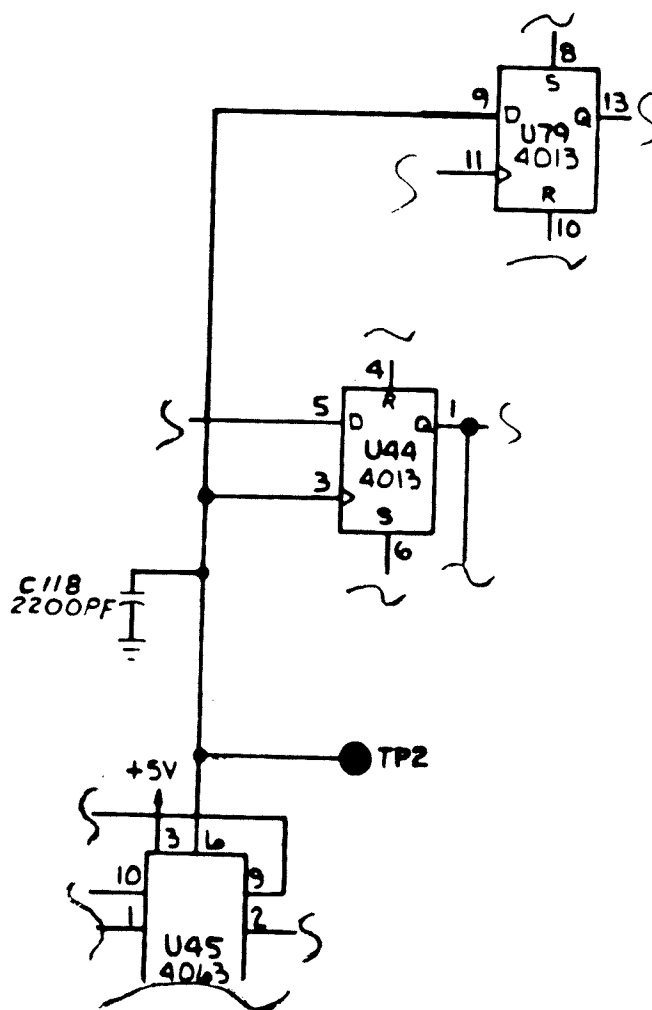


FIGURE 1

## TIME CODE READING IMPROVEMENT

NOT NEEDED

### I. APPLICABILITY

VPR-3 with Audio PWA 1467083-01 thru -09.

### II. PURPOSE

To improve Time Code Reading in Shuttle Mode.

### III. DISCUSSION

Three components values are changed. See procedure.

### IV. PARTS REQUIRED

Parts required for this update may be purchased through Ampex. Installation assistance can be obtained through your local Ampex regional office at current Ampex Field Engineering rates.

AMPEX P/N	DESCRIPTION	QTY
064-686	Capacitor, Cer., mono, 150 PF, 50V, 1%	1
064-726	Capacitor, Cer., mono, 270 PF, 50V, 1%	1
066-938	Resistor, 47 ohm, 1/4W, C.F. 5%	1

### V. PROCEDURE

1. Replace R387 (10K) with a 47 OHM.
2. Replace C135 (200 PF) with a 270 PF.
3. Replace C166 (680 PF) with a 150 PF.

AMPEX CORPORATION  
AUDIO-VIDEO SYSTEMS DIVISION

## FIELD ENGINEERING BULLETIN

MODEL VPR-3  
BULLETIN NO. 60988 SHEET 1 OF 1  
DATE 10/84 BP-8411-29

### SYNC EDIT ERASE MODIFICATION

11-21-84

ROY

COMPLETED

#### I. APPLICABILITY

All VPR-3's with Edit Erase PWA 1467630-01.

#### II. PURPOSE

To prevent the possibility of the Sync Edit Erase command not working.

#### III. DISCUSSION

See procedure.

#### IV. PARTS REQUIRED

None

#### V. PROCEDURE

1. Remove diode CR-3 on the edit erase PWA (this PWA is located near the scanner).
2. Add a jumper wire in place of the diode.
3. Update schematic to reflect changes made.

## FIELD ENGINEERING BULLETIN

MODEL VPR-3

BULLETIN NO. 60989

SHEET 1 OF 1

DATE 10/84 BP-8411-30

### REFERENCE GENERATOR MODIFICATION (625)

11-21-84  
ROY  
NOT USED  
OUR  
VPR-3

#### I. APPLICABILITY

VPR-3 with Reference Generator PWA 1467217-01 thru -03. (625).

#### II. PURPOSE

To improve timing.

#### III. DISCUSSION

A slight wiring change is made to U83 and U72.

#### IV. PARTS REQUIRED

None

#### V. PROCEDURE (See Schematic)

1. Cut trace at U83-6.
2. Add a jumper wire from U83-7 to U72-3.
3. Cut trace at U72-4.
4. Add a wire from U72-4 to U83-9.

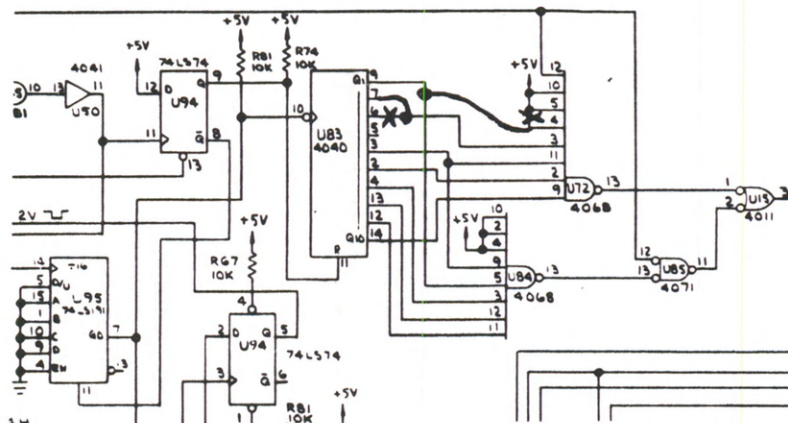


FIGURE 1



## HARMONIC DISTORTION IMPROVEMENT

NOT NEEDED

### I. APPLICABILITY

Audio PWA 1467083-01 thru -05.

### II. PURPOSE

To further improve second harmonic.

### III. DISCUSSION

A slight improvement in second harmonic distortion can be made by performing this FEB.

### IV. PARTS REQUIRED

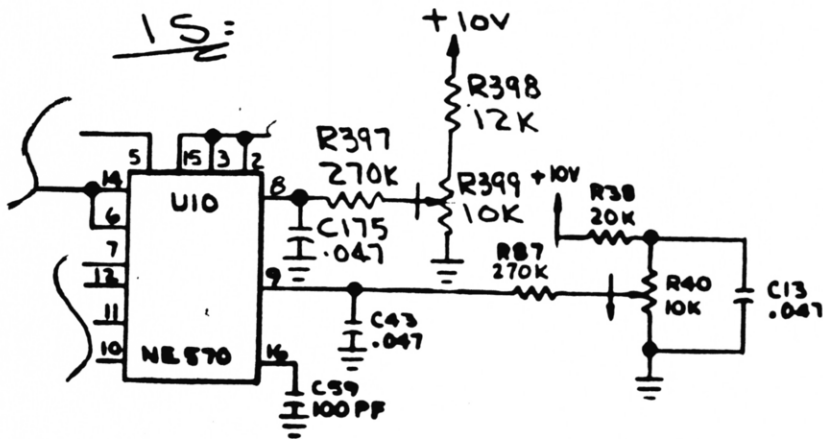
Parts required for this update may be purchased through Ampex. Installation assistance can be obtained through your local Ampex regional office at current Ampex Field Engineering rates.

AMPEX P/N	DESCRIPTION	QTY
058-565	Resistor, variable, 10K, .5W, 10%	1
064-845	Capacitor, Cer, Mono, .047 UF, 50V, 10%	1
066-865	Resistor, C.F., 12K .25W, 5%	1
076-050	Resistor, C.F., 270K, .25W, 5%	1

### V. PROCEDURE

1. Add a 0.47 UF, 50V, 10% capacitor, P/N as shown in Figure 1. Designate the capacitor C175.
2. Add a 270K resistor, P/N 076-050, as shown in Figure 1. Designate it R397.
3. Add a 12K resistor, P/N 066-865. Designate it R398.
4. Add a 10K pot. P/N 058-565. Designate it R399.
5. Update schematic to reflect changes made.

MODEL	VPR-3	SHEET 2 OF 2
BULLETIN NO.	60992	
DATE	10/84 BP-8411-31	



WAS =

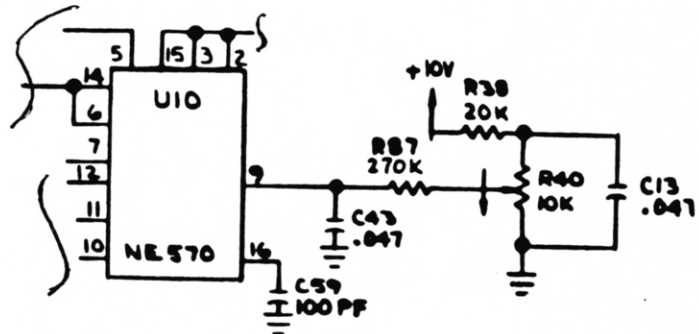


FIGURE 1

## FIELD ENGINEERING BULLETIN

MODEL VPR-3  
BULLETIN NO. 61023  
DATE 6/85 BP-8506-49

SHEET 1 OF 7

*Roy Please Install  
wed Thru or Fri 31<sup>st</sup> 1 hr 2 Aug 85  
T.S.*

### CAPSTAN/SCANNER MDA MODIFICATION

COMPLETED

8-13-85

Roy

#### I. APPLICABILITY

VPR-3 with capstan/scanner MDA 1467340-01 thru -05.

#### II. PURPOSE

To improve crosstalk (See Discussion).

#### III. DISCUSSION

The -13V connection of U13 is changed to a "cleaner" power source to prevent possible crosstalk which can cause the scanner to re-phase during shuttle mode.

#### IV. PARTS REQUIRED

<u>Ampex Part Number</u>	<u>Description</u>	<u>Quantity</u>
	Wire	

#### V. PROCEDURE:

1. Turn off power and wait 30 seconds before removing Capstan/Scanner MDA (PWA 4 in Power Supply Bay at rear of VTR).
2. Cut trace at U13-4 on the component side of the PWA between the two feed-thru holes (to the left of TP-11).
3. Add a small wire (on the bottom of the PWA) from the feed-thru hole still connected to U13-4 to the negative lead of C29.

**AMPEX**

 Ampex Corporation  
 REDWOOD CITY, CALIFORNIA

**LIST OF MATERIALS**

F.E.B. 61023 - BP-8506-49

 PRINTED WIRING ASSEMBLY  
 CAPSTAN AND SCANNER MDA

LIST OF MATERIALS NO:

1467340

Revision V

ITEM NO	PART NUMBER	DESCRIPTION	REF DESIG	QTY REQD PER DASH NUMBER					
				-01	-02	-03	-04	-05	-06
1	1467341	PRINTED WIRING BOARD		01	01	02	03	03	04
2									
3	1467342	SCHEMATIC							
4									
5	1400004-01	EJECTOR, PWB			1	1	1	1	1
6	1467008-BM	LABEL			1	1	1	1	1
7	1467309-02	SHIELD			1	1	1	1	1
8									
9	283-105	SPACER, PLAIN, .140 ID X .250 OD X .125 LG			1	1	1	1	1
10	471-063	SCREW, MACH., PAN HD., XREC, 4-40 X .438			1	1	1	1	1
11	474-500	SCREW, MACH., PAN HD., XREC, 4-40 X .312		5	5	5	5	5	5
12	502-002	WASHER, LOCK #4		1	1	1	1	1	1
13									
14									
15	1467226-01	PWA, CAPSTAN & SCANNER MDA, PIGGYBACK							
16	103307-01	SPACER INSULATOR	REF: R8, 11, 24, 28, 102, 104	12	12	12	12	12	12
17									
18									
19									
20	1467301-01	HEATSINK, MODIFIED	REF: (Q9, 10), (20, 21), (35, 36)	3	3	3	3	3	3
21	1467304-01	HEATSINK	REF: (CR5, 6), (9, 10), (27, 28)	3	3	3	3	3	3
22									
23									
24									
25									
26	063-419	CAPACITOR, ALUMINUM, 40uF, 150V.	C7, 8, 36	3	3	3	3	3	3
27									
28									
29									
30									
31	064-314	CAPACITOR, CER., MONO, 1uF, 20%, 50V	C6, 10, 31	3	3	3	3	3	3
32	064-790	470pF, 1%,	C20, 41	2	2	2	2	2	2
33	064-699	390pF, 1%,	C18	1	1	1	1	1	1
34	064-747	.082uF, 5%	C37, 38	2	2	2	2	2	2
35	064-746	.047uF, 5%	C23	1	1	1	1	1	1
36	064-754	.01uF, 5%	C1, 9, 15, 16, 17, 21, 25, 26, 28, 30, 40	11	11	11	11	11	11
37	064-756	CAPACITOR, CER., MONO, .022uF, 5%, 50V	C19	1	1	1	1	1	1

1467340

AMPEX		Amplex Corporation REDWOOD CITY, CALIFORNIA		CODL IDENT NO <b>92739</b>	LIST OF MATERIALS	F.E.B. 61023 - BP-8506-49									
ITEM NO	PART NUMBER	DESCRIPTION	REF DESIGN	QTY REQD PER DASH NUMBER											
				-01	-02	-03	-04	-05	-06						
36	034-258	CAPACITOR, MICA, 3200 pF, 500V, 5%	C2,5,13,14, 34,35	6	6	6	6	6	6						
37															
40															
41															
42															
43	037-901	CAPACITOR, TANT, 100uF, 20V, 20%	C3,4,11,12, 32,33	6	-	-	-	-	-						
44	037-948	CAPACITOR, TANT, 68uF, 25V, 20%	C24,27,29,39	4	-	-	-	-	-						
45	037-948	CAPACITOR, TANT, 68uF, 25V, 20%	C3,4,11,12,24,27, 29,32,33,39	1	10	-	-	1	-						
46	037-181	CAPACITOR, TANT, 47uF, 35V, 10%	C3,4,11,12,24,27, 29,32,33,39	1	1	10	10	10	10						
47															
48															
49	013-599	DIODE, SWITCHING	CR1,2,7,8,13,15,16,17, 19,21,22,23,24	13	13	13	13	13	13						
50															
51															
52	581-820	DIODE, POWER RECTIFIER, 60HQ100	CR5,6,9,10, 27,28	6	6	6	6	6	6						
53	581-826	DIODE, MRB140	CR3,4,11,12, 25,26	6	6	6	6	6	6						
54															
55															
56															
57															
58	051-770	FERRITE-CHOKE	FL1,2,3,4	4	4	4	4	4	4						
59															
60															
61															
62	000-028	INTEGRATED CIRCUIT, MC14575	U9	1	1	1	1	1	1						
63	002-921	TL288CP	U13	1	1	1	1	1	1						
64	000-036	MC14573	U3,7,10,11	4	4	4	4	4	4						
65															
66															
67	590-502	TL072	U12	1	1	1	1	1	1						
68															
69	590-542	INTEGRATED CIRCUIT, LM311	U1,2,4,5,6,8	6	6	6	6	6	6						
70															
71															
72															
73															
74	041-802	RESISTOR, C.C., 2.7 OHM, 1W, 5%	R8,11,24,28, 102,104	6	6	6	6	6	6						
75															
76	066-665	RESISTOR, C.F., 1K OHM, .25W, 5%	R5,7,12,19,23, 27,93,101,103	9	9	9	9	9	9						
77	066-667	3K	R4,6,15,20,63, 91,92	7	7	7	7	7	7						
78	066-717	47K	R105,106	2	2	2	2	2	2						
79															
80	066-824	1.5K	R10,14,21,25, 97,99	6	6	6	6	6	6						
81	066-827	3.9K	R1,2,17,18, 95,96	6	6	6	6	6	6						
82	066-830	RESISTOR, C.F., 10K OHM, .25W, 5%	R3,16,94,107	4	4	4	4	4	4						

LM-1467340

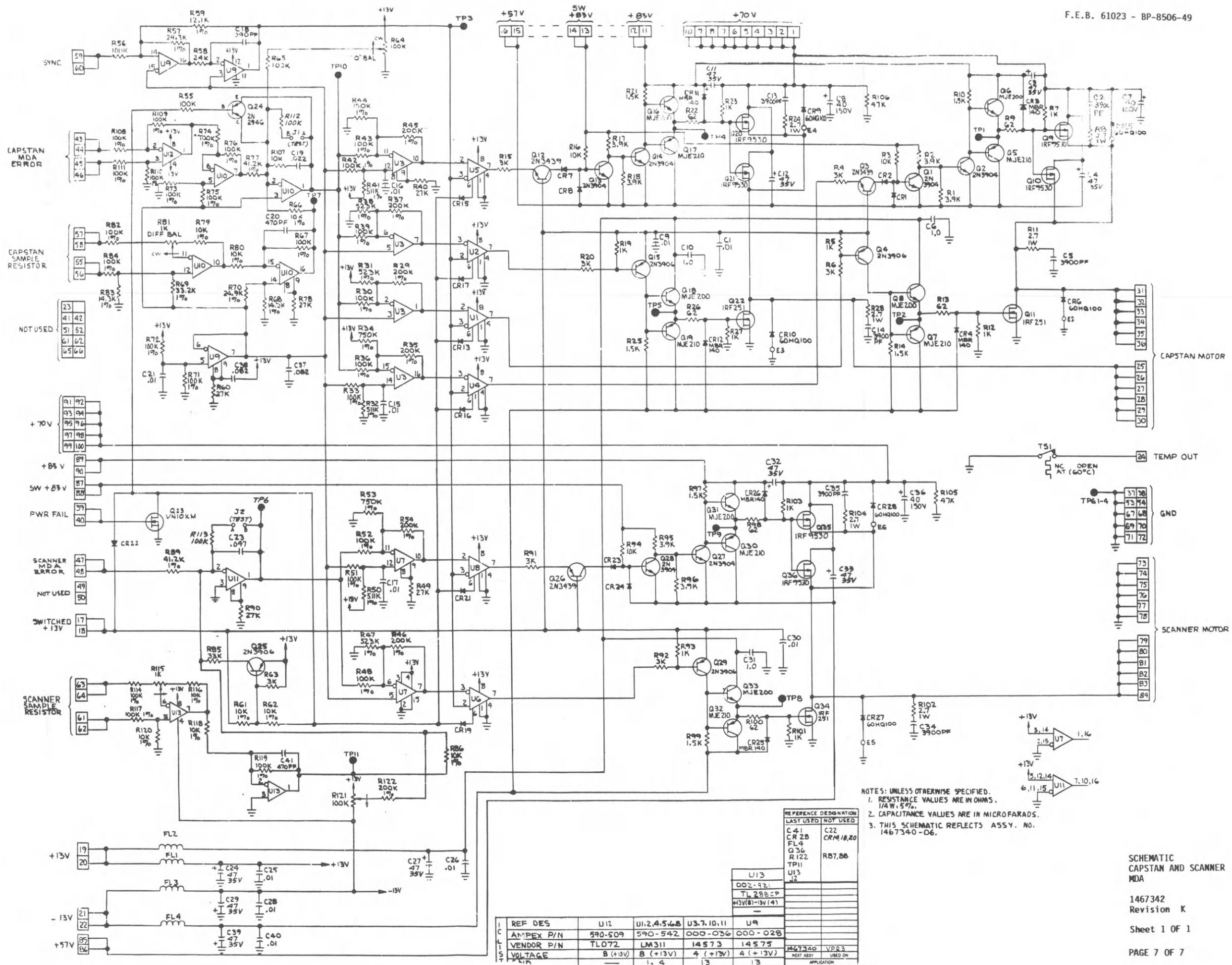


AMPTEX		Amplex Corporation REDWOOD CITY, CALIFORNIA		CODE IDENT NO 92739		LIST OF MATERIALS		F.E.B. 61023 - BP-8506-49																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																					
ITEM NO	PART NUMBER		DESCRIPTION	REF DESIGN	QTY REQD PER DASH NUMBER																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																								

LM-1467340

AMPEX		Amplex Corporation REDWOOD CITY, CALIFORNIA		CODE IDENT NO <b>97739</b>	LIST OF MATERIALS	F.E.B. 61023 - BP-8506-49									
ITEM NO	PART NUMBER	DESCRIPTION			REF DESIGN	DASH NUMBER									
						-04	-05	-06	-07	-08	-09	-10	-11	-12	-13
128	579-100	TRANSISTOR, MJE210			05, 7, 11, 12, 30, 32	6	6	6	6	6	6	6	6	6	6
129	579-101	TRANSISTOR, FET, 1RF251			Q11, 22, 34	3	3	3	3	3	3	3	3	3	3
130	579-102	TRANSISTOR, FET, 1RF9530			09, 10, 20, 21, 35, 36	6	6	6	6	6	6	6	6	6	6
131		POSITIVE ON B/K TRANSISTOR													
132		CHECKER													
133	140-696	CONNECTOR, SIGNAL CIRCUIT, JACK, PC TIP			REF: Q9, 10, 20, 21, 35, 36	18	18	-	-	-	-	-	-	-	-
134	140-697	CONNECTOR, SIGNAL CIRCUIT, JACK, PC TIP			REF: Q11, 22, 34	6	6	-	-	-	-	-	-	-	-
135	261-024	EYELET, METALLIC			REF: Q9, 10, 20, 21, 35, 36	-	-	18	18	1	-	-	-	-	-
136	261-053	EYELET, METALLIC			REF: Q11, 22, 34	-	-	6	6	-	-	-	-	-	-
137	187-055	TERMINAL, WIREWRAP			REF: J1, 2	4	4	4	4	4	4	4	4	4	4
138	187-259	TERMINAL, PC, TEST POINT			TP1-11	11	11	11	11	11	11	11	11	11	11
139	502-025	WASHER, LOCK, INTERNAL TOOTH, #6			REF: Q9, 10, 11, 20, 21, 22, 34, 35, 36	12	12	12	12	12	12	12	12	12	12
140	492-034	NUT, HEX, SM PATTERN, FINISHED, 6-32			REF: Q9, 10, 11, 20, 21, 22, 34, 35, 36	12	-	-	-	-	-	-	-	-	-
141	501-188	WASHER, PLAIN, SM PATTERN, #6			REF: Q9, 10, 11, 20, 21, 22, 34, 35, 36	12	12	12	12	12	12	12	12	12	12
142	280-998	TRANSISTOR MTG HDW, MTG PAD, 5 PINS			REF: Q3, 12, 26	3	3	3	3	3	3	3	3	3	3
143															
144	582-109	BUSHING, INSUL, NYLON			REF: Q9, 10, 11, 20, 21, 22, 34, 35, 36	12	12	12	12	12	12	12	12	12	12
145	582-162	INSULATOR, MICA, TO-3			REF: Q11, 22, 34	3	3	3	3	3	3	3	3	3	3
146	582-340	HEAT SINK			REF: Q11, 22, 34	3	3	3	3	3	3	3	3	3	3
147	582-343	TRANSISTOR MTG HDW, INSULATOR, MICA, TO-220			REF: Q9, 10, 20, 21, 35, 36	6	6	6	6	6	6	6	6	6	6
148															
149															
150															
151	CD739	WIRE, STRANDED, 20AWG				A/R	A/R	A/R	A/R	A/R	A/R	A/R	A/R	A/R	A/R
152	CD569	WIRE, STRANDED, 26 AWG				-	-	-	-	-	-	-	-	-	-
153															
154	283-196	SPACER, THREADED, PLAIN, 6-32, HEX .312 LG			REF: Q9-11, 20-22, 34-36	-	12	12	12	12	12	12	12	12	12
155	481-113	STUD, KNURLED, #6-32 X .500 LG			REF: Q9-11, 20-22, 34-36	12	12	12	12	12	12	12	12	12	12
156															
157															
158	492-037	NUT, HEX, FINISHED, 1/4-28			REF: CR5, 6, 9, 10, 27, 28	6	6	6	6	6	6	6	6	6	6
159	501-803	WASHER, PLAIN, .265 ID, .625 OD			REF: CR5, 6, 9, 10, 27, 28	6	6	6	6	6	6	6	6	6	6
160	502-028	WASHER, LOCK, INTERNAL TOOTH, .256 ID, .478 OD			REF: CR5, 6, 9, 10, 27, 28	6	6	6	6	6	6	6	6	6	6
161	582-170	TRANSISTOR, MTG HDV, INSULATOR, MICA			REF: CR5, 6, 9, 10, 27, 28	6	6	6	6	6	6	6	6	6	6
162	582-171	TRANSISTOR, MTG HDW, BUSHING, INSULATING, TEFLON			REF: CR5, 6, 9, 10, 27, 28	6	6	6	6	6	6	6	6	6	6
163															
164	087-388	SILICON, COMPOUND, GREASE, HEAT CONDUCTIVE			REF: CR5, 6, 9, 10, 27, 28, Q9, 10, 11, 20-22, 34-36		A/R	A/R	A/R	A/R	A/R	A/R	A/R	A/R	A/R
165															
166	087-023	FINISH, PAINT, INSULATING, RED			REF: CR5, 6, 9, 10, 27, 28, Q9, 10, 11, 20-22, 34-36		A/R	A/R	A/R	A/R	A/R	A/R	A/R	A/R	A/R
167															
168															
169		NOTES:													
170		3 STATIC SENSITIVE, SPECIAL HANDLING REQUIRED PER ME1-1.													
171															
172															

LM-1467340



SCHEMATIC  
CAPSTAN AND SCANNER  
MDA

1467342  
Revision K

Sheet 1 OF 1

PAGE 7 OF 7

**AMPEX**

## AIR SYSTEM FILTER IMPROVEMENT

*DONE  
7-22-85  
Mike*

### I. APPLICABILITY

All VPR-3's.

### II. PURPOSE

To improve filtering of the Air Supply to the Air Guides.

### III. DISCUSSION

The present sintered polyester filters in the input and output of the vacuum pump are changed to a microfiber type for improved filtering.

The type of filter used for the output removes 98% of 0.1 micron particles. The filter used for the input is not as critical, so a slightly coarser filter is used for extended life which removes 93% of 0.1 micron. particles. These changes reduce the possibility of any carbon particles from the vacuum pump vanes getting through the output filter and into the air guides. As an added precaution, an in-line filter is added in series with the scanner guides which removes 99.995% of any remaining particles.

### IV. PARTS REQUIRED

#### Note:

**A supply of these filters is included free of charge.  
Verify the type of filters before re-ordering (see below).**



**AIR SYSTEM FILTER IMPROVEMENT - Continued**

Original Air System (Filters inside Air Assembly)

<u>FILTER</u>	<u>AMPEX P/N</u>	<u>VENDOR P/N</u>
Input	052-056	050-05 DQ
Output	052-057	050-05 CQ
In-Line	052-055	9900-05 BK

New Air System (Filters mounted outside Air Assembly)

<u>FILTER</u>	<u>AMPEX P/N</u>	<u>VENDOR P/N</u>
Input	052-052	100-12 Grade 242
Output	052-051	100-12 CQ
In-Line	052-055	9900-05 BK

Filters may also be obtained from the vendor, Balston Filter Products, or one of their technical representatives.

BALSTON, INC.  
703 Massachusetts Ave.  
P.O. Box C  
Lexington, Massachusetts 02173  
Tel. (617)861-7240 Telex 92-3481  
Outside Mass: 800-343-4048

BALSTON CANADA LTD.  
1938 Mattawa Ave.  
Mississauga  
Ontario L4X 1k1  
(416)272-1516

BALSTON, LTD. MAIDSTONE, ENGLAND  
Telephone 0622-52201

BALSTON FILTERTECHNIK GmbH,  
Norderstedt, West Germany  
Telephone 040-5228603

Balston KK, Chiyoda-Ku, Tokyo  
Telephone 03230-9145

## AIR SYSTEM FILTER IMPROVEMENT - Continued

### V. PROCEDURE:

#### Note:

It is extremely important that the correct filter is installed in the output position. Failure to do so may cause clogging of the Air Guides.

A. MACHINES WITH ORIGINAL AIR SYSTEM 1461380 (FILTERS ARE LOCATED INSIDE AIR SYSTEM ENCLOSURE).

ALL FILTERS  
CHANGED

AS PER THIS  
BULLETIN

AT 458.3 HRS.

M.M. 7-22-85

1451.3 HRS, 6-1-90 M.M.

1. Turn off power to the VPR-3.
2. Tilt down the power supply chassis.
3. Remove the back cover of the Air System enclosure.
4. Remove the filter element from the input filter (at rear of Air System) by unscrewing the plastic bowl.
5. Install the dark colored Balston filter (050-05 DQ) in the input filter position. It may be necessary to crush it slightly since it is longer than the original element.
6. Remove the output filter (the closest one to you) and install the light colored Balston Filter (050-05 CQ).
7. Install the in-line filter (Balston 9900-05 BK) in series with the scanner air feed by cutting the hose approximately halfway between the air system and the scanner. The arrow on the filter should point toward the scanner.
8. Turn on power and check the Air System for leaks.
9. Verify proper operation and adjust pressures if necessary:

Capstan	70 inches of water
Guides	5 PSI
Scanner	7 1/2 PSI

**AIR SYSTEM FILTER IMPROVEMENT - Continued**

- B. MACHINES WITH AIR SYSTEM 1468060 (FILTERS LOCATED OUTSIDE AIR SYSTEM).
1. See Figure 1.
  2. Turn off power to the VPR-3.
  3. Tilt down the Power Supply Chassis.
  4. Identify the input filter (left side of air system looking from the rear of the VPR-3).
  5. Remove the transparent filter bowl by unscrewing it.
  6. Unscrew the serrated baffle (item 7) and remove the filter element together with the white louver (item 3). Make sure that the black o-ring is also removed.
  7. Install the Balston grade 242 filter inside the filter body. Secure the filter by screwing the transparent filter bowl onto the filter body.
  8. Remove the polycarbonate transparent bowl from the output filter assembly (right side looking from the rear of the VPR-3).
  9. Remove the filter element by unscrewing the serrated baffle (item 7). Do not remove the white louver.
  10. Install the yellow Balston filter element grade CQ and secure it inside the body by screwing the filter bowl in place. Make sure that it is tight so as to form a good seal. Do not tighten excessively.
  11. Install the in-line filter (Balston 9900-05 BK) by cutting the hose to the scanner approximately halfway from the air system to the scanner. The arrow on the filter should point toward the scanner.

**AIR SYSTEM FILTER IMPROVEMENT - Continued**

12. Turn on power and check the Air System for leaks.
13. Verify proper operation and adjust pressures if necessary:

Capstan	70 inches of water
Guides	5 PSI
Scanner	1 to 1.25 CFH on Air Flow Gauge

**VI. MAINTENANCE**

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The input and output filters used in the original air system (1461380) should be inspected weekly and changed every 500 hours. The input and output filters in the newer air systems (1468060) should be inspected monthly and changed every 5,000 hours.

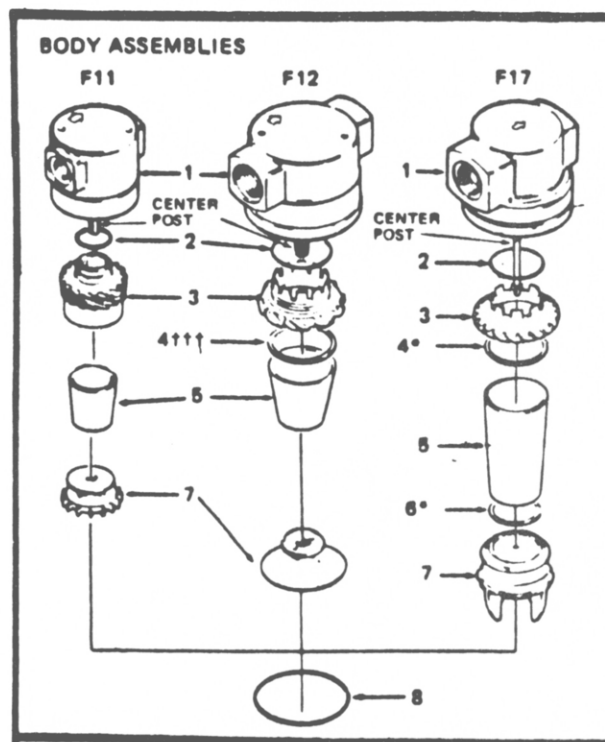
Anytime an output filter is replaced, the input filter should be replaced at the same time. Clogged filters can cause the vacuum pump to overheat and shut down the air system.

It is normal for the output filter to turn somewhat black due to carbon dust from the vanes. If the output filter turns extremely black after a few hours or has an excessive amount of carbon dust, the vacuum pump vanes need replacement (part number 592-048 for a set of 4). The in-line filter should never turn black unless the output filter is left out, damaged, or the wrong filter installed in the output position.

MODEL VPR-3  
BULLETIN NO. 61024  
DATE 3/85 BP-8503-40

SHEET 6 OF 6

USED ON VPR-3  
(F11) →



## PARTS DESCRIPTION FOR EXPLODED VIEW

- |  |   |
|--|---|
| 1. Body                                      | 22. F17 Metal Bowl Without Sight Glass              |
| 2. O-ring                                    | 23. F11 & F12 (Type A) Metal Bowl With Sight Glass  |
| 3. Louver                                    | 23A. F17 (Type A) Metal Bowl With Sight Glass       |
| 4. Gasket                                    | 24. Seal (2 required)†                              |
| 5. Filter Element                            | 25. Gauge Glass                                     |
| 6. Gasket                                    | 26. O-ring  |
| 7. Baffle                                    | 27. Retainer  |
| 8. O-ring                                    | 28. F12 (Type B) Metal Bowl With Sight Glass††      |
| 9. F11 & F12 Transparent Bowl                | 28A. F17 (Type B) Metal Bowl With Sight Glass††     |
| 10. F17 Transparent Bowl**                   | 29. Film  |
| 11. Bowl Guard                               | 30. O-ring  |
| 12. Retainer                                 | 31. Gauge Glass                                     |
| 13. Auto Drain (Items 13, 14, 15)            | 32. O-ring (2 required for F12; 3 required for F17) |
| 14. Float                                    | 33. Screw (2 required for F12; 3 required for F17)  |
| 15. Gasket                                   | 34. Retaining Ring                                  |
| 16. Nut                                      |   |
| 17. Insert                                   |   |
| 18. Gasket                                   |   |
| 19. Nut                                      |   |
| 20. Drain Petcock                            |   |
| 21. F11 & F12 Metal Bowl Without Sight Glass |   |

FIGURE 1 FILTER ASSEMBLY